

## CLAIMS

1. An amplification circuit, comprising:

5 an amplifier, wherein said amplifier outputs a digital signal after amplifying an input analog signal, said analog signal having a voltage that differs from a predetermined voltage during a first time period and said digital signal having a voltage that fixates on said predetermined voltage during a second time period;

10 a first switch that stops the supply of electric power to said amplifier during said first time period; and

a second switch that fixates the output of said amplifier to the predetermined voltage in the first time period.

2. The amplification circuit according to claim 1, wherein said predetermined voltage is a  
15 voltage that is substantially in the center of an upper and lower limit, and wherein the voltage that differs from the predetermined voltage is substantially different than a voltage that is substantially in the center of an upper and lower limit.

3. The amplification circuit according to claim 1, wherein said amplifier is an inverter.  
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4. The amplification circuit according to claim 1, wherein said amplifier comprises a channel width, said width being more than two times the width of a channel width of a first switch, said first switch comprising a MOS transistor.

25 5. The amplification circuit according to claim 1, wherein said amplifier comprises a channel width, said width being less than the width of second switch, said second switch comprising a MOS transistor.

6. A comparison circuit, comprising:

30 a first and second voltage input, said first voltage having a value at the center of a predetermined upper and lower limit;

a comparator, wherein during a first time period a voltage at the center level of a predetermined upper and lower limits is output from said comparator, and wherein during a second time period a voltage that differs from said center level is output, said output during the second time period representative of a relationship between said first and second voltage input;

an amplifier that amplifies said output of said comparator and converts said amplified output to a digital signal;

a first switch that stops the supply of electric power to said amplifier during said first time period; and

a second switch that fixates the output of said amplifier to the predetermined voltage during said first time period.

7. The comparison circuit according to claim 6, comprising a pair of voltages that construct the differential signal between said first voltage and said second voltage.

8. The comparison circuit according to claim 6, wherein said amplifier receives an output signal from said comparator that has been converted by a signal conversion circuit, and wherein the signal conversion circuit converts the output signal of said comparator.

9. The comparison circuit according to claim 6, wherein said comparator comprises:

an inverter;

a switch that short circuits an input and an output from said inverter during a first time period, wherein a capacitor operatively connects the input of the said inverter to a first terminal;

a switch selectively positioned between a second terminal of said capacitor and said first voltage, wherein said switch is short circuited during said first time period; and

a switch selectively positioned between a second terminal of said capacitor and said second voltage, wherein said switch is short circuited during said second time period.

10. An analog to digital conversion circuit, comprising:

a plurality of comparison circuits operatively connectable to receive a plurality of different reference voltages, wherein each of said comparison circuits also receives the same input voltage;

5 an encoder that encodes a digital signal output from said comparison circuit, wherein each of the comparison circuits outputs a middle level of voltage in between an upper and a lower predetermined limit during a first time period, and wherein during a second time period the comparator outputs a voltage that differs from said middle level, said voltage during said second time period representing a relationship between the said input voltage and a  
10 corresponding reference charge;

an amplifier that amplifies the output signal of said comparator and then generates the output as a digital signal;

a first switch that stops the supply of electric power to said amplifier during said first time period; and

15 a second switch that fixates the output of said amplifier to a predetermined voltage during said first time period.